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1-13724  
**DRAFT**

MEMORANDUM TO FILE

DATE: February 17, 1989

RE: Tankhouse Flows

The January 1989 water balance around the anode building also enabled a tankhouse flow to be estimated. ISCO flow meters were used to monitor locations 24A and 26A (see Figure 1). The difference in flow between these points yields a value for 25C, the effluent from manhole 25. The influent to manhole 25 consists of an overflow line from the pond, a discharge line for the iron tanks, a sewer line for the tankhouse building, and a line from the shipping building. Upon inspection, the line from the pond was closed. Also the shipping bldg. line had a small flow of less than 5 gpm. These results are listed in Table 1. The difference between the average value, 40 gpm, and the flow from the shipping building, 5 gpm, provide an estimate of the flow from the tankhouse, or 35 gpm. Additional batch discharges from the tankhouse (slimes department) were described by John Sundstrom of Cerro.

John listed four other sources of effluent from the tankhouse. The first is the effluent from the magnesium treatment of spent electrolyte. This process is described in Attachment A. Second, prior to emersion in the electrolytic tanks, thin stainless steel sheets are prepared. This process uses two steps. First, the plates are dipped in a "stripper plate parting agent" both. This contains water and detergents and is discharged to the sewer approximately once per two weeks. The second step consists of two sequential polishing tanks. The first, a phosphoric acid solution is discharged once per year. The second tank, containing rinse water is emptied once every two weeks. All of *these* periodic discharges are summarized in Table 2.

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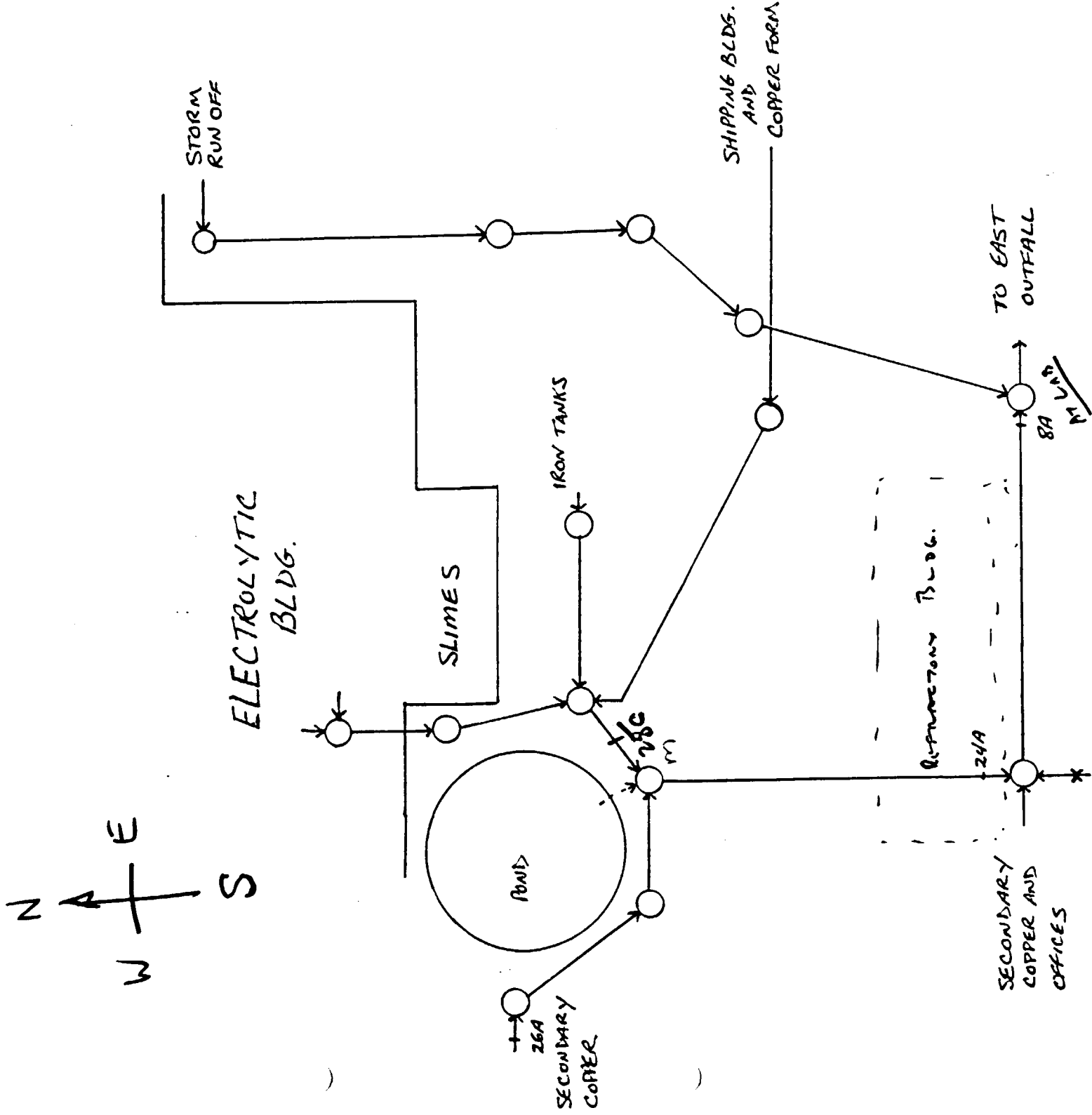
Table 1. Estimated Tankhouse Flow at 7C

	<u>26A (gpm)</u>	<u>24A (gpm)</u>	<u>24A-26A (gpm)</u>
1.	27.9	55.4	27.5
2.	23.8	69.7	45.9
3.	20.8	54.4	33.6
4.	16.7	61.6	44.9
5.	14.9	60.9	46.0
AVG.	20.8	60.4	39.6

Table 2. Batch Discharges From Tankhouse

<u>Source</u>	<u>Estimated Volume (gal.)</u>	<u>Comment</u>
1. Stripper Plate Parting Agent (water & detergents)	1500	Discharged approx. 1/2 weeks.
2. Liquid Polishing Tanks: <i>- detergent</i> (a) <del>"Water-Polition"</del> & Phosphoric Acid	1500	Discharged approx. 1/year.
(b) Water Rinse	1500	Discharged approx. 1/2 weeks.
3. Magnesium <del>Treated</del> Electrolyte	1200	Discharged approx. 6/week. Flow can contain nickel concentrations of 200 ppm and have copper concentrations of 10 ppm.

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TO: E. Cooney  
FROM: J. Sundstrom  
SUBJECT: MANHOLE 8C FLOWS FROM REFINERY AREA

Flows into manhole 8C from the refinery can come from two sources. Any overflow from the iron tanks goes into the manhole near the iron tanks and flows over to 8C. Overflow from the iron tanks contains varying proportions of electrolyte from the tankhouse and can contain nickel up to as high as 4 grams per liter. The second source of flow is from magnesium hydroxide treatment of electrolyte to control nickel. This flow comes from the filter press and is mostly water with a heavy load of magnesium sulfate. Nickel in this flow runs up to perhaps 200 ppm and copper up to perhaps 10 ppm. Magnesium treated electrolyte is discharged in batches of about 1200 gallons each perhaps as many as 6 times per week.

John L. Sundstrom